DSB Task Force On DT&E Report

Defense Science Board Task Force

- **This report is a product of the Defense Science Board (DSB). The DSB is a Federal Advisory Committee established to provide independent advice to the Secretary of Defense. Statements, opinions, conclusions, and recommendations in this report do not necessarily represent the official position of the Department of Defense.**
- **A Defense Science Board (DSB) Task Force on Developmental Test and Evaluation (DT&E) was convened in the summer of 2007 to investigate the causal factors for the high percentage of programs entering Initial Operational Test and Evaluation (IOT&E) in recent years which have been evaluated as both not operationally effective and not operationally suitable. The following are the specific issues which the Task Force was asked to assess:**

  – *Office of the Secretary of Defense (OSD) organization, roles, and responsibilities for Test and Evaluation (T&E) oversight. Compare organization, roles, and responsibilities in both DT&E and Operational Test and Evaluation (OT&E). Recommend changes that may contribute to improved DT&E oversight, and facilitate integrated T&E.*

  – *Changes required to establish statutory authority for OSD DT&E oversight. Title 10 United States Code (USC) has an OT&E focus, and does not address OSD authority in oversight of DT&E. Recommend changes to Title 10 or other U.S. statutes that may improve OSD authority in DT&E oversight.*

  – *Many IOT&E failures have been due to lack of operational suitability. Specific problems have been in the materiel readiness sustainment areas of reliability, maintainability, and availability. Recommend improvements in DT&E process to discover suitability problems earlier, and thus improve likelihood of operational suitability in IOT&E.*

DSB Final Report on DT&E
The Honorable John Young Memorandum - 6/6/08

THE UNDER SECRETARY OF DEFENSE

3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

ACQUISITION, TECHNOLOGY AND LOGISTICS

JUN - 6 2008

MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Final Report of the Defense Science Board (DSB) Task Force on Developmental Test and Evaluation

The attached report contains the findings and recommendations of the Defense Science Board Task Force on Developmental Test and Evaluation. This study was challenged to investigate the causal factors for the high percentage of recent programs entering Initial Operational Test and Evaluation (IOT&E) that have been evaluated as not operationally effective and suitable.

The Task Force's principal finding was the practice of reliability growth methodology during system design and development was largely discontinued over the past 15 years. The study concluded that the single most important step to correct the high suitability failure rates is to ensure programs are formulated and funded to execute a viable systems engineering strategy that includes a robust reliability growth plan from inception.

I approve the public release of this report, which contains actionable recommendations to increase the number of programs evaluated as operationally effective and suitable. By July 30, please review the report findings and recommendations and provide comments to Lieutenant Colonel Charles Lominac at 703-571-0081.

John J. Young, Jr.

Attachment:
As stated

cc:
Director Office of Management and Budget
Deputy Secretary of Defense

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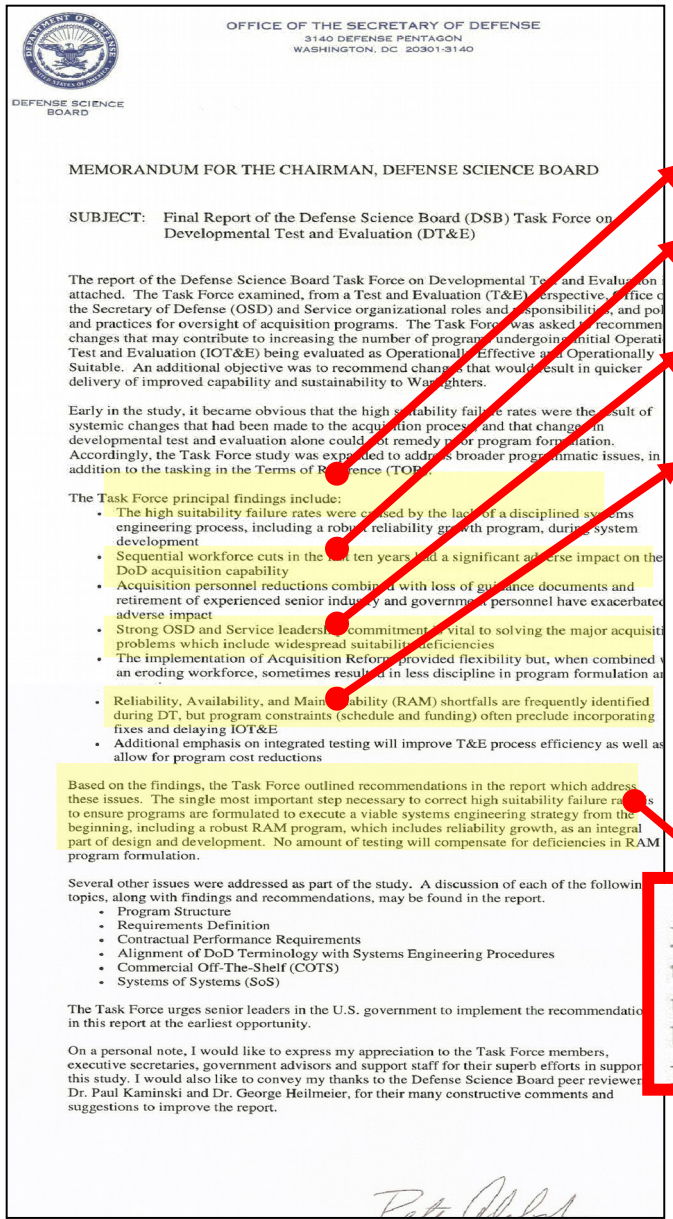
DSB Final Report on DT&E
Chairman Of DSB, Charles Adolph Memorandum - 6/6/08



OFFICE OF THE SECRETARY OF DEFENSE
3140 DEFENSE PENTAGON
WASHINGTON, DC 20301-3140

DEFENSE SCIENCE BOARD

MEMORANDUM FOR THE CHAIRMAN, DEFENSE SCIENCE BOARD

SUBJECT: Final Report of the Defense Science Board (DSB) Task Force on Developmental Test and Evaluation (DT&E)

The report of the Defense Science Board Task Force on Developmental Test and Evaluation is attached. The Task Force examined, from a Test and Evaluation (T&E) perspective, Office of the Secretary of Defense (OSD) and Service organizational roles and responsibilities, and policies and practices for oversight of acquisition programs. The Task Force was asked to recommend changes that may contribute to increasing the number of programs undergoing Initial Operational Test and Evaluation (IOT&E) being evaluated as Operationally Effective and Operationally Suitable. An additional objective was to recommend changes that would result in quicker delivery of improved capability and sustainability to Warfighters.

Early in the study, it became obvious that the high suitability failure rates were the result of systemic changes that had been made to the acquisition process and that changes in developmental test and evaluation alone could not remedy poor program formulation. Accordingly, the Task Force study was expanded to address broader programmatic issues, in addition to the tasking in the Terms of Reference (TOR).

The Task Force principal findings include:

- The high suitability failure rates were caused by the lack of a disciplined systems engineering process, including a robust reliability growth program, during system development
- Sequential workforce cuts in the last ten years had a significant adverse impact on the DoD acquisition capability
- Acquisition personnel reductions combined with loss of guidance documents and retirement of experienced senior industry and government personnel have exacerbated adverse impact
- Strong OSD and Service leadership commitment is vital to solving the major acquisition problems which include widespread suitability deficiencies
- The implementation of Acquisition Reform provided flexibility but, when combined with an eroding workforce, sometimes resulted in less discipline in program formulation and
- Reliability, Availability, and Maintainability (RAM) shortfalls are frequently identified during DT, but program constraints (schedule and funding) often preclude incorporating fixes and delaying IOT&E
- Additional emphasis on integrated testing will improve T&E process efficiency as well as allow for program cost reductions

Based on the findings, the Task Force outlined recommendations in the report which address these issues. The single most important step necessary to correct high suitability failure rates is to ensure programs are formulated to execute a viable systems engineering strategy from the beginning, including a robust RAM program, which includes reliability growth, as an integral part of design and development. No amount of testing will compensate for deficiencies in RAM program formulation.

Several other issues were addressed as part of the study. A discussion of each of the following topics, along with findings and recommendations, may be found in the report.

- Program Structure
- Requirements Definition
- Contractual Performance Requirements
- Alignment of DoD Terminology with Systems Engineering Procedures
- Commercial Off-The-Shelf (COTS)
- Systems of Systems (SoS)

The Task Force urges senior leaders in the U.S. government to implement the recommendations in this report at the earliest opportunity.

On a personal note, I would like to express my appreciation to the Task Force members, executive secretaries, government advisors and support staff for their superb efforts in support of this study. I would also like to convey my thanks to the Defense Science Board peer reviewers, Dr. Paul Kaminski and Dr. George Heilmeier, for their many constructive comments and suggestions to improve the report.

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